

- - 6. (Newly Added) The device of claim 5, wherein said DC/DC converter is in communication with said regenerative circuit. - -
- - 7. (Newly Added) The device of claim 4, further comprising a rectifier in communication with an AC power supply and said DC/DC converter. - -
- - 8. (Newly Added) The device of claim 7, wherein said over-speed detection circuit provides said over-speed signal to said inverter which provides an instruction signal to said motor drive circuit to operate said switch portion. - -
- - 9. (Newly Added) A power supply for a magnetic bearing controller, comprising:
a regenerative circuit for providing power from a motor to said magnetic bearing controller;
an over-speed detector that generates an over-speed signal when the speed of said motor is greater than or equal to a predetermined speed; and
a switch that switches said motor from an inverter in a motor controller to said regenerative circuit in response to said over-speed signal. - -
- - 10. (Newly Added) The power supply of claim 9, further comprising a power failure detector that detects a power failure and outputs a power failure signal, wherein said switch further switches said motor from said inverter in said motor controller to said regenerative circuit in response to said power failure signal. - -

- - 11. (Newly Added) The power supply of claim 10, wherein said power failure detector is connected between said over-speed detector and said motor controller. - -

- - 12. (Newly Added) A magnetic bearing controller comprising:

a magnetic bearing drive controller which drives a magnetic bearing in a motor;

a motor drive circuit including:

an inverter that drives said motor;

a regenerative circuit that provides regenerative power from said motor to said magnetic bearing drive controller; and

a switch that switches said motor between said inverter and said regenerative circuit; and

an over-speed detector that generates a switch signal if the speed of said motor is greater than or equal to a predetermined speed,

wherein said switch switches said motor from said inverter to said regenerative circuit in response to said switch signal. - -

- - 13. (Newly Added) The controller of claim 12, further comprising a power failure detector that generates a second switch signal, wherein said switch switches said motor from said inverter to said regenerative circuit in response to said second switch signal. - -

- - 14. (Newly Added) The controller of claim 13, wherein said power failure detector is connected between said over-speed detector and said motor drive circuit. - -

- - 15. (Newly Added) The controller of claim 14, wherein said power failure detector forwards said first switch signal from said over-speed detector to said motor drive circuit. - -
- - 16. (Newly Added) The controller of claim 14, wherein said power failure detector forwards said second switch signal from said over-speed detector to said motor drive circuit.
- - 17. (Newly Added) The controller of claim 12, further comprising:
an inverter controller that controls said inverter; and
a DC/DC converter in communication with said magnetic bearing drive controller and said inverter controller. - -
- - 18. (Newly Added) The controller of claim 17, wherein said DC/DC converter is in communication with said motor drive circuit. - -
- - 19. (Newly Added) The controller of claim 18, wherein said DC/DC converter is in communication with said regenerative circuit. - -
- - 20. (Newly Added) The controller of claim 17, further comprising a rectifier in communication with an AC power supply and said DC/DC converter. - -